UNITED STATES PATENT AND TRADEMARK OFFICE

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10/661,481	09/15/2003	Masayoshi Nishitani	0124/0013	9233

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-11 were previously presented for examination.

2.   Claims 9-11 are currently canceled.

3.   Claims 7-8 are presently pending.

Response to Amendment

4.   The objection to the abstract has been withdrawn.

5.   The 101 rejection to claim 3 has been withdrawn in view of the applicant's amendment.

6.   The 101 rejection to claims 9 and 11 have been withdrawn since applicant cancels the

claims.

Response to Arguments

7.   Applicant's arguments with respect to amended claims 1-8 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura

USPN 6,807,285 B1 in view of Miyahara et al. USPN 6,341,350 B1, Kadono USPN 6,334,187

B1. and Honsinger 6678390 B1.

Regarding claims 1 and 2, Iwamura discloses a system for transmitting and receiving encrypted

information, comprising an encrypted information recording apparatus, an encrypted information

reproducing apparatus, and a transmission line connecting the encrypted information recording

apparatus and the encrypted information reproducing apparatus, the encrypted information

recording apparatus transmitting a digital information signal to the encrypted information

reproducing apparatus via the transmission line, the digital information signal resulting from

embedding encrypted information in a digital contents signal, the encrypted information

reproducing apparatus receiving the digital information signal and reproducing the encrypted

information from the digital information signal;

wherein the encrypted information recording apparatus (fig. 1 element 110) comprises:

first means for dividing the digital contents signal into first data blocks (col. 9 lines 17-

21);

second means for calculating a statistical quantity of the digital contents signal for every

first data block generated by the first means (col. 8 lines 49-col. 9 lines-54 and fig. 4 element

S404);

third means for encrypting information to be embedded into the encrypted information

(col. 11 lines 65-col. 12 lines 37);

wherein the encrypted information reproducing apparatus (fig. 1 element 120)

comprises:

seventh means for dividing the digital information signal into second data blocks

corresponding to the first data blocks generated by the first means (col. 9 lines 17-21);

eighth means for calculating the statistical quantity of the digital information signal for

every second data block generated by the seventh means (col. 8 lines 49-col. 9 lines-54 and fig.

4 element S404);

ninth means for deciding the encrypted information in the digital information signal in

response to the statistical quantity calculated by the eighth means for every second data block

generated by the seventh means to extract the encrypted information from the digital information

signal (col. 11 lines 65-col. 12 lines 37); and

tenth means for decrypting the encrypted information extracted by the ninth means into the

original information to be embedded (col. 11 lines 65-col. 12 lines 37).

Iwamura fails to disclose fourth means for calculating a corrective quantity from the

encrypted information and the statistical quantity calculated by the second means.

However Miyahara et al. discloses calculating a corrective quantity or luminance sum

difference (see col. 11 lines 39-56, and fig. 14 element S66)

It would have been obvious to modify the teachings to calculating a corrective quantity

from the encrypted information and the statistical quantity within the system of Iwamura because

they are analogous in digital watermarking. One would have been motivated to modify the

teachings because it would alter the average luminance value in response to the encrypted

information.

Iwamura and Miyahara et al. fail to explicitly disclose:

fifth means for changing a first set of random numbers into a second set of random

numbers in response to the corrective quantity calculated by the fourth means, and for generating a

signal representative of the random numbers in the second set, wherein the random numbers in the

first set include positive and negative integers, and an average value among the random numbers in

the first set is equal to zero; and wherein the fifth means comprises means for ranking the random

numbers in the first set; and

six means for adding the signal representative of the second random numbers to the digital

contents signal for every first data block generated by the first means to embed the encrypted

information in the digital contents signal and thereby generate the digital information signal.

However Kadono teaches compressing image data in to blocks and embedding secrete

information in image data by using pseudo-random number (col. 7 lines 55-60, col. 12 lines 22-col.

13 lines 61, and fig. 24-25) fifth means for changing a first set of random numbers into a second set

of random numbers in response to the corrective quantity calculated by the fourth means, and for

generating a signal representative of the random numbers in the second set, and six means for

adding the signal representative of the random numbers in the second set to the digital contents

signal for every first data block generated by the first means to embed the encrypted information

in the digital contents signal and thereby generate the digital information signal;

Kando also disclose the amended limitation wherein the random numbers in the first set

include positive and negative integers (col. 13 lines 6-10), and an average value among the

random numbers in the first set is equal to zero (see 13 lines 24-33; *wherein E(x) is the average*

of x.... the value is approximately 0);

wherein the fifth means comprises means for ranking the random numbers in the first set

(col. 12 lines 46-49); and

manse for selecting first random numbers from the ranked random numbers, and means

for changing the first set of random numbers into the second set of random numbers (col. 7 lines

55-60, col. 12 lines 22-col. 13 lines 61, and fig. 24-25).

It would have been obvious to modify the teachings of random number in watermarking

within the combination system because they are analogous in digital watermarking. One would

have been motivated to modify the teachings because it would be secured and randomized data

embedding.

The combination of above references applied fail to explicitly disclose ranking the

random numbers in the first set in an order from a lowest absolute value toward a greatest

absolute value. However Honsinger discloses a method for embedding and extracting an

embedded message from a digital image and the method is performed using generated psudo-

random numbers and absolute values (see col. 4 lines 22-col. 5 lines 36). Therefore it would have

been obvious to one having ordinary skill in the art at the time of the invention was made to

modify the teachings and rank random numbers in the first set in an order from a lowest absolute

value toward a greatest absolute value because it was known to user random number absolute

value in generating a watermark data at the time of the invention was made.

Regarding claim 3, Iwamura discloses a computer program for embedding encrypted

information in a digital contents signal, comprising the steps of:

dividing the digital contents signal into data blocks (col. 9 lines 17-21);

calculating a statistical quantity of the digital contents signal for every data

block (col. 8 lines 49-col. 9 lines-54 and fig. 4 element S404);

encrypting information to be embedded into the encrypted information (col. 11

lines 65-col. 12 lines 37);

Iwamura fails to disclose calculating a corrective quantity from the encrypted

information and the calculated statistical quantity;

However Miyahara et al. discloses calculating a corrective quantity or luminance sum

difference (see col. 11 lines 39-56, and fig. 14 element S66). It would have been obvious to

modify the teachings to calculating a corrective quantity from the encrypted information and the

statistical quantity within the system of Iwamura because they are analogous in digital

watermarking. One would have been motivated to modify the teachings because it would alter the

average luminance value in response to the encrypted information.

Iwamura and Miyahara et al. fail to explicitly disclose changing a first set of random

numbers into a second set of random numbers in response to the corrective quantity calculated by

the fourth means, and for generating a signal representative of the random numbers in the second

set, wherein the random numbers in the first set include positive and negative integers, and an

average value among the random numbers in the first set is equal to zero; and wherein the

generating step comprises means for ranking the random numbers in the first set; and

adding the signal representative of the second random numbers to the digital contents

signal for every first data block generated by the means to embed the encrypted information in the

digital contents signal and thereby generate the digital information signal.

However Kadono teaches compressing image data in to blocks and embedding secrete

information in image data by using pseudo-random number (col. 7 lines 55-60, col. 12 lines 22-col.

13 lines 61, and fig. 24-25) changing a first set of random numbers into a second set of random

numbers in response to the corrective quantity calculated by the fourth means, and for generating a

signal representative of the random numbers in the second set, and adding the signal representative

of the random numbers in the second set to the digital contents signal for every first data block

generated by the means to embed the encrypted information in the digital contents signal and

thereby generate the digital information signal;

Kando also disclose the amended limitation wherein the random numbers in the first set

include positive and negative integers (col. 13 lines 6-10), and an average value among the

random numbers in the first set is equal to zero (see 13 lines 24-33; *wherein E(x) is the average

of x.... the value is approximately 0*);

wherein the means comprises means for ranking the random numbers in the first set (col.

12 lines 46-49); and

manse for selecting first random numbers from the ranked random numbers, and means

for changing the first set of random numbers into the second set of random numbers (col. 7 lines

55-60, col. 12 lines 22-col. 13 lines 61, and fig. 24-25).

It would have been obvious to modify the teachings of random number in watermarking

within the combination system because they are analogous in digital watermarking. One would

have been motivated to modify the teachings because it would be secured and randomized data

embedding.

The combination of above references applied fail to explicitly disclose ranking the

random numbers in the first set in an order from a lowest absolute value toward a greatest

absolute value. However Honsinger discloses a method for embedding and extracting an

embedded message from a digital image and the method is performed using generated psudo-

random numbers and absolute values (see col. 4 lines 22-col. 5 lines 36). Therefore it would have

been obvious to one having ordinary skill in the art at the time of the invention was made to

modify the teachings and rank random numbers in the first set in an order from a lowest absolute

value toward a greatest absolute value because it was known to user random number absolute

value in generating a watermark data at the time of the invention was made.

Regarding claim 4, Iwamura discloses an apparatus comprising

first means for dividing a digital contents signal into segments (col. 9 lines 17-21);

second means for detecting a condition of the digital contents signal for every segment

generated by the first means (col. 8 lines 49-col. 9 lines-54 and fig. 4 element S404);

Iwamura fails to disclose determining a corrective quantity in response to auxiliary

information and the condition detected by the second means;

However Miyahara et al. discloses calculating a corrective quantity or luminance sum

difference (see col. 11 lines 39-56, and fig. 14 element S66).

It would have been obvious to modify the teachings to calculating a corrective quantity in

response to auxiliary information and the condition detected by the second means within the

system of Iwamura because they are analogous in digital watermarking. One would have been

motivated to modify the teachings because it would alter the average luminance value in response

to the encrypted information.

Iwamura and Miyahara et al. fail to explicitly disclose changing a first set of random

numbers into a second set of random numbers in response to the corrective quantity calculated by

the fourth means, and for generating a signal representative of the random numbers in the second

set, wherein the random numbers in the first set include positive and negative integers, and an

average value among the random numbers in the first set is equal to zero; and wherein the means

comprises means for ranking the random numbers in the first set; and

for adding the signal representative of the second random numbers to the digital contents

signal for every first data block generated by the means to embed the encrypted information in the

digital contents signal and thereby generate the digital information signal.

However Kadono teaches compressing image data in to blocks and embedding secrete

information in image data by using pseudo-random number (col. 7 lines 55-60, col. 12 lines 22-col.

13 lines 61, and fig. 24-25) changing a first set of random numbers into a second set of random

numbers in response to the corrective quantity calculated by the fourth means, and for generating a

signal representative of the random numbers in the second set, and six means for adding the signal

representative of the random numbers in the second set to the digital contents signal for every first

data block generated by the first means to embed the encrypted information in the digital contents

signal and thereby generate the digital information signal;

Kando also disclose the amended limitation wherein the random numbers in the first set

include positive and negative integers (col. 13 lines 6-10), and an average value among the

random numbers in the first set is equal to zero (see 13 lines 24-33; *wherein E(x) is the average

of x.... the value is approximately 0*);

wherein the means comprises means for ranking the random numbers in the first set (col.

12 lines 46-49); and

manse for selecting first random numbers from the ranked random numbers, and means

for changing the first set of random numbers into the second set of random numbers (col. 7 lines

55-60, col. 12 lines 22-col. 13 lines 61, and fig. 24-25).

It would have been obvious to modify the teachings of random number in watermarking within the combination system because they are analogous in digital watermarking. One would have been motivated to modify the teachings because it would be secured and randomized data embedding.

The combination of above references applied fail to explicitly disclose ranking the random numbers in the first set in an order from a lowest absolute value toward a greatest absolute value. However Honsinger discloses a method for embedding and extracting an embedded message from a digital image and the method is performed using generated psudo-random numbers and absolute values (see col. 4 lines 22-col. 5 lines 36). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the teachings and rank random numbers in the first set in an order from a lowest absolute value toward a greatest absolute value because it was known to user random number absolute value in generating a watermark data at the time of the invention was made.

Regarding claim 5, Iwamura discloses an apparatus, wherein the condition detected by the second means is an average-luminance-related condition (col. 8 lines 49-col. 9 lines-54 and fig. 4 element S404).

Regarding claim 6, Iwamura discloses an apparatus, further comprising sixth means for encrypting the auxiliary information before the auxiliary information is used by the third means (col. 12 lines 1-37).

10.   Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura

USPN 6,807,285 B1 in view of Miyahara et al. USPN 6,341,350 B1, Kadono USPN 6,334,187

B1, Honsinger 6678390 B1 and Xie et al. USPN 6,512,836 B1.

Regarding claim 7, Iwamura discloses an apparatus comprising:

   first means for dividing a digital contents signal into segments (col. 9 lines 17-21);

   second means for detecting an average luminance value of the digital contents

signal for every segment generated by the first means (col. 8 lines 49-col. 9 lines-54 and

fig. 4 element S404);

   Iwamura fails to means for determining a corrective quantity in response to a bit of

auxiliary information and the average luminance value detected by the second means for every

segment generated by the first means, wherein bits of the auxiliary information are assigned to the

segments generated by the first means respectively;

   However Miyahara et al. discloses calculating a corrective quantity or luminance

sum difference and/or a corrective quantity or luminance sum in response to the average

luminance value detected by the second means for every segment generated by the first means,

wherein bits of the auxiliary information are assigned to the segments generated by the first

means respectively (see col. 11 lines 39-56, and fig. 14 element S66). It would have been

obvious to modify the teachings to calculating a corrective quantity in response to a bit of

auxiliary information and the average luminance value within the system of Iwamura because

they are analogous in digital watermarking. One would have been motivated to modify the

teachings because it would alter the average luminance value in response to the encrypted information.

Iwamura and Miyahara et al. fail to explicitly disclose changing a first set of random numbers into a second set of random numbers in response to the corrective quantity calculated by the fourth means, and for, generating a signal representative of the random numbers in the second set, wherein the random numbers in the first set include positive and negative integers, and an average value among the random numbers in the first set is equal to zero; and wherein the means comprises means for ranking the random numbers in the first set; and

means for adding the signal representative of the second random numbers to the digital contents signal for every first data block generated by the first means to embed the encrypted information in the digital contents signal and thereby generate the digital information signal.

However Kadono teaches compressing image data in to blocks and embedding secrete information in image data by using pseudo-random number (col. 7 lines 55-60, col. 12 lines 22-col. 13 lines 61, and fig. 24-25) fourth means for changing a first set of random numbers into a second set of random numbers in response to the corrective quantity calculated by the fourth means, and for, generating a signal representative of the random numbers in the second set, and means for adding the signal representative of the random numbers in the second set to the digital contents signal for every first data block generated by the first means to embed the encrypted information in the digital contents signal and thereby generate the digital information signal;

Kando also disclose the amended limitation wherein the random numbers in the first set include positive and negative integers (col. 13 lines 6-10), and an average value among the

random numbers in the first set is equal to zero (see 13 lines 24-33; *wherein E(x) is the average*

of x.... the value is approximately 0);

wherein the fifth means comprises means for ranking the random numbers in the first set

(col. 12 lines 46-49); and

manse for selecting first random numbers from the ranked random numbers, and means

for changing the first set of random numbers into the second set of random numbers (col. 7 lines

55-60, col. 12 lines 22-col. 13 lines 61, and fig. 24-25).

It would have been obvious to modify the teachings of random number in watermarking

within the combination system because they are analogous in digital watermarking. One would

have been motivated to modify the teachings because it would be secured and randomized data

embedding.

The combination of above references applied fail to explicitly disclose ranking the

random numbers in the first set in an order from a lowest absolute value toward a greatest

absolute value. However Honsinger discloses a method for embedding and extracting an

embedded message from a digital image and the method is performed using generated psudo-

random numbers and absolute values (see col. 4 lines 22-col. 5 lines 36). Therefore it would have

been obvious to one having ordinary skill in the art at the time of the invention was made to

modify the teachings and rank random numbers in the first set in an order from a lowest absolute

value toward a greatest absolute value because it was known to user random number absolute

value in generating a watermark data at the time of the invention was made.

The above applied references fail to explicitly teach wherein an average luminance value

of every segment of the composite digital signal is either odd or even depending on a logic state

of a corresponding bit of the auxiliary information.

However Xie et al. teaches a method of embedding digital watermarking to compressed

video (MPEG video) in using DC coefficients from luminance blocks is odd or even (see col. 2

lines 12-45) that reads on an average luminance value of every segment of the composite

digital signal is either odd or even depending on a logic state of a corresponding bit of the

auxiliary information.

Therefore it would have been obvious to one having ordinary skill in the art at the time of

the invention was made to include the teachings of Xie et al. within the combination system

because they are analogous in data embedding. One would have been motivated to do so

because it is well known at the time of the invention.

Regarding claim 8, Iwamura further discloses an apparatus, further comprising sixth means for

encrypting the auxiliary information before the auxiliary information is used by the third means

(col. 12 lines 1-37).

Conclusion

11.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Eleni A. Shiferaw whose telephone number is 571-272-3867.

The examiner can normally be reached on Mon-Fri 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nasser R. Moazzami can be reached on (571) 272-4195. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2136

August 3, 2007

NASSER MOAZZAMI
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8/6/07